

## CLAIMS

- 1 A transreflective liquid crystal display comprising a liquid crystal cell disposed  
5 between a front substrate and a rear substrate, a front polariser located in front of the front substrate and a rear polariser located behind the rear substrate, a front retarder located between the front substrate and the front polariser, a rear retarder located between the rear substrate and the rear polariser, and a light source located behind the rear polariser.
- 10 2 A transreflective display as claimed in claim 1 wherein the front retarder is an achromatic combination retarder.
- 3 A transreflective display as claimed in claim 1 or 2, wherein the front retarder comprises  
15 a front halfwave plate and a front quarterwave plate.
- 4 A transreflective display as claimed in claim 3, wherein the front quarterwave plate has a retardation that, in conjunction with the retardation of the liquid crystal layer, produces in one state circular polarised light after a single pass.
- 20 5 A transreflective display as claimed in claim 3 or 4, wherein the front quarterwave plate has a retardation that, in conjunction with the retardation of the liquid crystal layer, produces in a second state linear polarised light after a single pass.
- 25 6 A transreflective display as claimed in claim 3, 4 or 5, wherein the front quarterwave plate has a retardation of between 0nm and 250nm.
- 7 A transreflective display as claimed in any preceding claim, wherein the rear retarder comprises a rear quarterwave plate.
- 30 8 A transreflective display as claimed in claim 7, when also dependent, directly or indirectly, on claim 3, wherein the rear quarterwave plate has a retardation that, in

conjunction with the retardation of the liquid crystal layer and the front quarterwave plate, produces in one state circular polarised light after a single pass.

- 9 A transfective display as claimed in claim 7 or 8, when also dependent, directly or indirectly, on claim 3, wherein the rear quarterwave plate has a retardation that, in-  
5 conjunction with the retardation of the liquid crystal layer and the front quarterwave plate, produces in a second state linear polarised light after a single pass.
- 10 A transfective display as claimed in claim 7, 8 or 9, wherein the rear quarterwave plate has a retardation of between 100nm and 180nm.
- 11 A transfective display as claimed in any preceding claim, wherein the rear substrate is provided with a partially reflective and partially transmissive mirror.
- 12 A transfective display as claimed in any preceding claim, wherein the liquid crystal cell is provided with a rear electrode which is partially reflective and partially transmissive.
- 13 A transfective display as claimed in any preceding claim, wherein the rear retarder  
20 further comprises a rear halfwave plate.
- 14 A transfective display as claimed in claim 13, when also dependent directly or indirectly on claim 6, wherein the rear halfwave plate is located between the rear quarterwave plate and the rear polariser.
- 15 A transfective display comprising a liquid crystal divided into a plurality of pixels, addressing means for addressing each pixel and switching each pixel between different states resulting in different levels of transmission of light through the display, a flashing backlight located behind the liquid crystal, and a partially reflective mirror located  
25 between the liquid crystal and the backlight for both reflecting ambient light back  
30 through the liquid crystal and allowing transmission of light from the backlight through

the liquid crystal, wherein each pixel is provided with a light filter, and wherein the backlight comprises a plurality of sequentially flashing light sources.

16 A transfective display as claimed in claim 15, wherein each light filter is a colour  
5 light filter, and wherein said sequentially flashing light sources are of different colours.

17 A transfective display as claimed in claim 15 or 16, wherein said liquid crystal is part of an active matrix display.

10 18 A transfective display as claimed in claim 15, 16 or 17, wherein the liquid crystal forms a PI or OCB cell.

19 A transfective display as claimed in any one of claims 15 to 18, wherein each light  
15 source is a light emitting diode (LED).

20 A transfective display as claimed in any one of claims 1 to 19, wherein each colour filter provides a varying level of absorption across its area.

21 A transfective display as claimed in claim 20 wherein each colour filter has a  
20 transparent region.

22 A transfective display as claimed in claim 21, wherein said liquid crystal is provided with a plurality of partially reflective electrodes each having a light transmissive area, and wherein each said transmissive area is optically aligned with a transparent region of  
25 one of said colour filters.

23 A transfective display as claimed in any one of claims 15 to 22, which also has any or all of the features of the transfective display of claims 1 to 14.

30 24 A transfective display substantially as hereinbefore described with reference to any of Figures 2, 4, 6, 8, 11 or 12.